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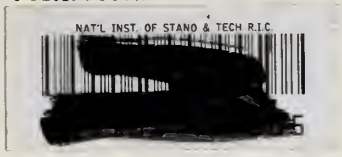

FIPS

FIPS PUB 154

FEDERAL INFORMATION PROCESSING STANDARDS PUBLICATION
(Former Federal Standard 1032)

HIGH SPEED 25-POSITION INTERFACE FOR DATA TERMINAL EQUIPMENT AND DATA CIRCUIT-TERMINATING EQUIPMENT

CATEGORY: TELECOMMUNICATIONS STANDARD

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CATEGORY: TELECOMMUNICATIONS STANDARD

National Computer Systems Laboratory
National Institute of Standards and Technology
(formerly National Bureau of Standards)
Gaithersburg, MD 20899

NOTE: As of 23 August 1988, the National Bureau of Standards (NBS) became the National Institute of Standards and Technology (NIST) when President Reagan signed into law the Omnibus Trade and Competitiveness Act.

Issued November 4, 1988

U.S. Department of Commerce
Robert A. Mosbacher, Secretary

Ernest Ambler, Acting Under Secretary for Technology

National Institute of Standards and Technology
Raymond G. Kammer, Acting Director

This Standard was developed under a Memorandum of Understanding between NIST and NCS.

Foreword

The Federal Information Processing Standards Publication Series of the National Institute of Standards and Technology (NIST) is the official publication relating to standards and guidelines adopted and promulgated under the provisions of Section 111(d) of the Federal Property and Administrative Services Act of 1949 as amended by the Computer Security Act of 1987, Public Law 100-235. These mandates have given the Secretary of Commerce and NIST important responsibilities for improving the utilization and management of computer and related telecommunications systems in the Federal Government. The NIST through its National Computer Systems Laboratory provides leadership, technical guidance, and coordination of Government efforts in the development of standards and guidelines in these areas.

Comments concerning Federal Information Processing Standards Publications are welcomed and should be addressed to the Director, National Computer Systems Laboratory, National Institute of Standards and Technology, Gaithersburg, MD 20899.

James H. Burrows, Director
National Computer Systems
Laboratory

Abstract

This standard adopts Electronic Industries Association (EIA) Standard EIA-530-1987, which specifies the interconnection of data terminal equipment (DTE) and data circuit-terminating equipment (DCE) employing serial binary data interchange circuits with control information exchanged on separate control circuits. In particular, this standard defines the signal characteristics, interface mechanical characteristics, functional description of interchange circuits, and standard interfaces for selected communication system configurations. The electrical characteristics of the interchange circuits are specified by reference to Electronic Industries Association (EIA) standard EIA-422-A (FED-STD-1020A) and EIA-423-A (FED-STD-1030A).

Key words: communications equipment; data circuit-terminating equipment (DCE); data terminal equipment (DTE); data transmission (high speed); Federal Information Processing Standard; telecommunications.

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1988 November 4

Announcing the Standard for

HIGH SPEED 25-POSITION INTERFACE FOR DATA TERMINAL EQUIPMENT AND DATA CIRCUIT-TERMINATING EQUIPMENT

Federal Information Processing Standards Publications (FIPS PUBS) are issued by the National Institute of Standards and Technology after approval by the Secretary of Commerce pursuant to Section 111(d) of the Federal Property and Administrative Services Act of 1949 as amended by the Computer Security Act of 1987, Public Law 100-235.

1. Name of Standard. High Speed 25-Position Interface for Data Terminal Equipment and Data Circuit-Terminating Equipment (FIPS PUB 154).

2. Category of Standard. Telecommunications Standard.

3. Explanation. This standard adopts Electronic Industries Association (EIA) Standard EIA-530-1987, which specifies the interconnection of data terminal equipment (DTE) and data circuit-terminating equipment (DCE) employing serial binary data interchange circuits with control information exchanged on separate control circuits. In particular, this standard defines the signal characteristics, interface mechanical characteristics, functional description of interchange circuits, and standard interfaces for selected communication system configurations. The electrical characteristics of the interchange circuits are specified by reference to Electronic Industries Association (EIA) standard EIA-422-A (FED-STD-1020A) and EIA-423-A (FED-STD-1030A).

4. Approving Authority. Secretary of Commerce.

5. Maintenance Agency. National Communications System, Office of Technology and Standards.

6. Cross Index.

a. Former Federal Standard (FED-STD) 1032, High Speed 25-Position Interface for Data Terminal Equipment and Data Circuit-Terminating Equipment.

b. EIA-530, High Speed 25-Position Interface for Data Terminal Equipment and Data Circuit-Terminating Equipment.

7. Related Documents. The following documents of the issue in effect on the date of invitation for bids or requests for proposals form a part of this standard to the extent specified herein:

a. FIPS PUB 138, Electrical Characteristics of Balanced Voltage Digital Interface Circuits (EIA-422A) (former Federal Standard 1020A).

b. FIPS PUB 142, Electrical Characteristics of Unbalanced Voltage Digital Interface Circuits (EIA-423A) (former Federal Standard 1030A).

c. FIPS PUB 143, General Purpose 37-Position and 9-Position Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment (EIA-449) (former Interim Federal Standard 001031).

d. EIA-422A, Electrical Characteristics of Balanced Voltage Digital Interface Circuits.

e. EIA-423-A, Electrical Characteristics of Unbalanced Voltage Digital Interface Circuits.

f. EIA-449, General Purpose 37-Position and 9-Position Interface for Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange.

g. Federal Information Resources Management Regulation 201-8.1, Federal ADP and Telecommunications Standards.

8. Objectives. This standard is to facilitate interoperability between telecommunication facilities and systems of the Federal government and compatibility of these facilities and systems at the

computer-communications interface with data processing equipment (systems) of the Federal Government.

9. Applicability. This standard shall be used by all Federal departments and agencies in the design and procurement of telecommunication equipment employing high speed (20,000 to 2,000,000 bits per second) interchange between DTEs and DCEs. This standard may optionally be used at speeds lower than 20 Kb/s. It is highly recommended in the speed range of 10 to 20 Kb/s for new systems that are likely to be upgraded to higher speeds, or when both sides of the interface are covered by one procurement action. This standard will not interoperate with equipment using EIA-232 electrical characteristics. Departments and agencies with a requirement to be compatible with the 37-position and 9-position interface specified in FIPS 143 (former Interim FED-STD-001031) (i.e., EIA-449) may continue to use this Standard, but new systems must conform to FIPS 154 (former FED-STD-1032).

10. Specifications. This standard adopts in whole Electronic Industries Association (EIA) Standard EIA-530-1987, High Speed 25-Position Interface for Data Terminal Equipment and Data Circuit-Terminating Equipment.

11. Implementation. The use of this standard by Federal departments and agencies is compulsory and binding, effective April 21, 1989.

12. Waivers. Under certain exceptional circumstances, the heads of Federal departments and agencies may approve waivers to Federal Information Processing Standards (FIPS). The head of such agency may redelegate such authority only to a senior official designated pursuant to section 3506(b) of Title 44, United States Code. Waivers shall be granted only when:

a. Compliance with a standard would adversely affect the accomplishment of the mission of an operator of a Federal computer system, or

b. Cause a major adverse financial impact on the operator which is not offset by Government-wide savings.

Agency heads may act upon a written waiver request containing the information detailed above. Agency heads may also act without a written waiver request when they determine that conditions for meeting the standard cannot be met. Agency heads may approve waivers only by a written decision which explains the basis on which the agency head made the required finding(s). A copy of each such decision, with procurement sensitive or classified portions clearly identified, shall be sent to: National Institute of Standards and Technology, ATTN: FIPS Waiver Decisions, Technology Building, Room B-154, Gaithersburg, MD 20899.

In addition notice of each waiver granted and each delegation of authority to approve waivers shall be sent promptly to the Committee on Government Operations of the House of Representatives and the Committee on Governmental Affairs of the Senate and shall be published promptly in the *Federal Register.*

When the determination on a waiver applies to the procurement of equipment and/or services, a notice of the waiver determination must be published in the *Commerce Business Daily* as a part of the notice of solicitation for offers of an acquisition or, if the waiver determination is made after that notice is published, by amendment to such notice.

A copy of the waiver, any supporting documents, the document approving the waiver and any supporting and accompanying documents, with such deletions as the agency is authorized and decides to make under 5 U.S.C. Sec. 552(b), shall be part of the procurement documentation and retained by the agency.

13. Conflict with Referenced Documents. Where the requirements stated in this standard conflict with any requirements in a referenced document, the requirements of this standard shall apply. The nature of the conflict between this standard and a referenced document shall be submitted in duplicate to the Director, National Computer and Telecommunications Laboratory, Technology Building, Room B-154, National Institute of Standards and Technology, Gaithersburg, MD 20899.

14. Special Information. The electrical, mechanical, and functional interface and interchange circuits shall conform to EIA-530-1987.

15. Where to Obtain Copies. Copies of this publication are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. (Sale of the included specifications document is by arrangement with the American National Standards Institute.) When ordering, refer to Federal Information Processing Standards Publication 154 (FIPSPUB154), and title. Payment may be made by check, money order, purchase order, credit card, or deposit account.

Copies of the EIA standards can be obtained from the Electronic Industries Association, 2001 Eye Street, NW, Washington, DC 20006.

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